

# Chapter III: Affected Environment

## Introduction

This section presents topics included in the analysis of the Marine Mammal Center Site and Improvements Project Environmental Assessment and a rationale for their inclusion. Topics were selected based on federal law, regulations, and executive orders; National Park Service (NPS) management policies; and concerns expressed by the public, park staff, or other agencies during scoping and comment periods. This section also provides a discussion of topics that were dismissed from further analysis.

A short rationale for each impact topic considered in this chapter is given below. A description of the existing conditions for each selected topic is provided later in this chapter. The affected environment described in this chapter encompasses the geographical area affected by the alternatives. The local context for the proposed project is the Marine Mammal Center (The Center) and the regional context for the proposed project is the Golden Gate National Recreation Area (GGNRA) and Marin Headlands including Rodeo Beach. The potential impacts of each alternative within each topic area are presented in Chapter IV, Environmental Analysis.

## Topics Considered in this Assessment

### *Natural Resources*

The federal and state Endangered Species Acts (and associated legislation), Clean Water Act, Clean Air Act, and National Environmental Policy Act require that the effects of any federal undertaking examine natural resources. In addition, National Park Service management policies and natural resource management guidelines call for the consideration of natural resources in planning proposals. The Marine Mammal Center (The Center) is located within GGNRA – an area of abundant natural resources. It is therefore necessary to characterize both these natural resources and the environmental consequences to these resources that could result from implementation of the Marine Mammal Center Site and Improvements Project alternatives.

Analysis was performed for the following natural resource topics: water resources; biological resources; geology, soils and seismicity; hazardous materials; air quality; and noise.

### *Cultural Resources*

The National Historic Preservation Act, the Archeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and the National Environmental Policy Act require that the effects of any federal undertaking on cultural resources be examined. In addition, National Park Service management policies and cultural resource management guidelines call for the consideration of cultural resources in planning proposals. Historic resources exist within the project area and could be affected by the alternatives.

## ***Social Resources***

The analysis of social resources examines the effects of the Marine Mammal Center Site and Improvements Project on the social environment within the park. Analysis of transportation examines the effects of the alternatives on transportation in this area of the park. Conserving the park's scenery is a crucial component of the National Park Service 1916 Organic Act. Stewardship of GGNRA requires consideration of two integrated purposes: to preserve the park's unique natural and cultural resources and scenic beauty, and to make these resources available to visitors for study, enjoyment, and recreation. Park visitors utilize The Center and also use trails and roads in the surrounding area, as such alternatives' effects on visitor experience must be addressed.

Analysis was performed for the following social resource topics: transportation, visual resources, and recreation and public use.

## **Natural Resources**

### ***Water Resources***

#### **Water Use and Treatment**

Water is obviously an integral part of operations at The Center. The total water available to all facilities in the Marin Headlands is provided by Marin Municipal Water District and is fed through a single municipal supply pipe line. The majority of water used by The Center's programs is directly related to animal care; more specifically, the majority of water is utilized in the Life Support Systems (LSS) that clean and re-circulate water contained in the animal pools. Domestic water utilization makes up the balance of total water use. The Center compiled a study of historic water use as part of planning for the project (Appendix E). As defined for this report, domestic water use primarily includes washing the animal pens although cooking, laundry, and restroom facilities are also included in these calculations. The current LSS systems have evolved into inefficient and often unreliable systems that deliver marginal water quality under certain environmental conditions.

Water use for the existing facilities is estimated based on water meter readings from December 1997 through June 2002. For the purpose of this evaluation, annual water uses for existing conditions are presented in two categories. The first category is based on average animal loading conditions and would represent a 'typical year', while the second category is based on higher animal loading conditions that occur during El Nino events (occurring at approximately 7-8 year intervals). According to The Center's records, the most recent El Nino event occurred during 1998. The current total volume of water that can be contained in the existing pools totals about 47,000 gallons assuming all pools are filled. The total volume capacity of the pools is not, however, the basis of annual water use as pools are repeatedly emptied and filled. Based on the utilities record (Appendix E), the following volumes are historical averages for annual water use at The Center:

Typical Condition: 4,520,000 gallons per year

El Nino Condition: 5,950,000 gallons per year

Under typical conditions this averages out to approximately 12,400 gallons per day however a daily rate is not realistic as Center facilities are much more active in the spring and summer. A peak day (which would occur March to September) may average as much as 31,640 gallons per day. These averages include water use for the LSS systems, wash down of the animal pens and other general plumbing demands at the facility. The existing water use for each of these demands is summarized below and in Appendix E.

Water use for the existing life support systems (LSS) is assumed to include demands for backwashing the filters, flushing of the pools for water quality purposes, dumping and filling of pools for animal husbandry purposes, and intermittent maintenance work associated with the life support systems. Currently, the existing pools are dumped and filled approximately once per week during peak loading conditions to help maintain acceptable water quality. Backwashing the water filters is a fundamental operation necessary to purge the filters of accumulated particles so that the filters can continue to cleanse the re-circulated water. Backwashing the filters uses a lot of water and modern LSS systems are often designed to ‘recover’ water during the backwash cycle. ‘Backwash recovery’ capability for the existing LSS is limited at The Center.




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*TMMC above-grade  
piping*

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In their current configuration, the LSS systems Filters, Basins, Piping etc. at The Center are all above-grade and are exposed to sunlight resulting in UV degradation of equipment (a long-term maintenance issue) and, more importantly, heat-gain is introduced into the water circulating through the systems. An unfortunate dynamic exists whereas the heat-gain introduced to the water systems typically coincides during the months of highest animal populations. Bacteria flourish in warmer water therefore this operational coincidence results in the out-dated LSS systems under-performing and delivering the poorest water quality just when the systems and staff are the most stressed. The poorer water quality during this time is not only an added health risk to the animals but results in conditions that are not safe for the staff working with the animals in the pools.

Domestic water use includes the animal care program for feeding the animals and washing down their pen enclosures; domestic water use for people includes personal hygiene, comfort and meal preparation. The single largest source of domestic water use is in washing down the existing pen enclosures. On-site testing confirmed that the hose connections used in washing down the pens deliver 15 gallons per minute (GPM) of water. Each of the 28 existing pens is ‘washed down’ for

10 minutes, 3 times per day (when occupied). Pens are typically occupied by animals 4 months (30 days x 4 = 112 days) of the year. Thus the domestic systems and wash-down functions which feed into the wastewater system are responsible for about 1.5 million gallons per year.

### **Storm Water and Wastewater Inputs**

Wastewater from the Center is discharged through the Marin Headlands Sanitary Sewer system. The storm-water watershed above the site is first intercepted by an artificial open drainage swale that is located above the project site and beyond the project scope. Between this upstream swale and the project site is a secondary open-air drainage swale that intercepts storm water and diverts the storm water around the project site.

On-site: the existing storm water runoff surface-drains to open-air drainage swales at the perimeter that continue downstream as open-air swales paralleling the access road to the West and draining to the natural landscape to the South-East. Catch-basins added on-site drain to the same (downstream) open air drainage swales.

Area drains installed within the existing pens and pool areas are intended primarily for the wash-down operations in the pen enclosure. This operation necessitates washing down raw sewage therefore these area drains are connected directly to the wastewater system or sanitary sewer. The area drains within the existing pens (about 10,000 square feet) also receive rainfall. An NPS report produced in 2000 found that two to four times a year during extreme storm conditions the sanitary sewer lift-stations overflows. The rainfall from the Center's pen enclosures appears to be a contributing factor to the lift-station overflow.

### **Biological Resources**

The project study area for this biological resources section encompasses all project components proposed under each alternative, including the Center and ancillary features such as parking and roadways and adjacent habitats or resources that could be directly or indirectly affected by the construction and operation of the proposed project.

### **Vegetation and Wildlife**

Vegetation and wildlife occurring within the project area include vegetation communities that support wildlife that naturally occur within the greater Golden Gate National Recreation Area. Due to the past land use practices of the project area, including the military operations formerly at the site now occupied by the Marine Mammal Center, much of the native vegetation has been substantially altered. Remnants of native communities that do occur on the project site connect to larger vegetation communities and corridors that extend beyond the project boundaries. The site now contains two vegetation communities: Coastal scrub and annual grassland.

**Coastal Scrub Community.** The coastal scrub community occurs in patches within the project site and in a larger corridor along the southern boundary of the project site. This community is characterized by dense shrubs, grasses and wildflowers. Species in this community that were observed within the project boundaries include bush lupine (*Lupinus arboreus*), coyote brush (*Baccharis pilularis*), buckbrush (*Ceanothus* spp.), and California coffeeberry (*Rhamnus californica*). Several Monterey pines (*Pinus radiata*) and cypress trees (*Cupressus* sp.) were planted as a windbreak along the northwestern section of the project site and would be included

in this community. Some of these trees would be removed under the Project. Along the southern side of the project area this community becomes more dominant and part of a larger corridor of coastal scrub that extends beyond the boundaries of the project site.

**Annual Grassland and Ruderal Community.** Due to the extensive alteration of the project site, non-native annual grasses and ruderal (weedy) species now dominate most of the project area along the western and northern boundaries. Species within this community include wild oat (*Avena fatua*), rattlesnake grass (*Briza major*), rip-gut brome (*Bromus hordaceus*), and sweet fennel (*Foeniculum vulgare*). This community dominates much of the project area within the current footprint of the Center. Along the southern portions of the project boundary this community occurs as a mosaic within the coastal scrub community.

**Native Plant Communities.** Historically, coastal scrub, chaparral and coastal prairie habitats occurred throughout the GGNRA and within the Marine Mammal Center project area. Due to the historical land use of the project area and its former use as a missile site and military operation, while some natives remain, much of the native communities have been eliminated or substantially altered. These activities create a more hospitable environment for the establishment of invasive species. Increased populations of invasives have created inhospitable conditions for native plant populations.

### **Wildlife**

The vegetation communities within the project area and within the regional context of the GGNRA, provide nesting, foraging, and corridor habitat for diversity of wildlife species. Species existing within the project area are those adapted to grassland and scrub habitat and include mammals, reptiles, amphibians and birds. Large mammals such as black-tailed deer (*Odocoileus hemionus columbianus*), mountain lion (*Felis concolor*), coyote (*Canis latrans*), grey fox (*Urocyon cinereargenteus*), bobcat (*Lynx rufus*) and raccoon (*Procyon lotor*) migrate through the project site. Small mammals and rodents such as western harvest mouse (*Reithrodontomys megalotis*), Botta's pocket gopher (*Thomomys bottae*), and deer mouse (*Peromyscus maniculatis*) use the grassland communities for foraging and nesting materials. Nesting birds and raptors use the grassland and mature non-native trees for nesting and foraging materials. The coastal location of the project site likely serves as refugia for a variety of common land birds, migrating birds and raptors such as white tailed kite (*Elanus leucurus*), great horned owl (*Bubo virginianus*), and red tailed hawk (*Buteo jamaicensis*).

### **Special-Status Species**

Special status plants and animals species include those species that are listed as endangered, threatened or as species of special concern by state and federal agencies. A reconnaissance-level survey was conducted by an ESA biologist on October 21, 2003. The purpose of the visit was to identify habitat that could support special-status plant and animal species. Prior to the site visit the California Natural



Diversity Database (CNDDB) was queried and the Fish and Wildlife Service provided a list of Special status species for Marin County and five surrounding USGS 7.5 minute quadrangles including Point Bonita, San Francisco North, San Rafael Mountain, San Quentin, and Bolinas.

### **Plants**

A total of 15 federally listed endangered or threatened and 11 other special-status plants are reported with potential to occur within the vicinity of the project area (See Appendix B). Of these 26, only four have at least moderate potential to occur within the project area boundaries. Many of the listed species occur on serpentine and/or sand soils or in unique habitats not present on the project site. Due to past land use practices, including the military operations at the project site, the habitat for these special-status plants has been substantially altered and likely no longer exists at the project site. However, since no rare plant surveys have been conducted at the site, the presence or absence of special-status plants within the vicinity of the project site cannot be verified.

### **Wildlife**

A total of 25 special-status animals are reported with potential to occur within the vicinity of the project site. Of these, only the nesting white tailed kite (*Elanus leucurus*) and saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*) are expected to occur in the close vicinity of the project site. White tailed kites nest in dense coastal scrub vegetation that occurs along the southern perimeter of the project area. Saltmarsh common yellowthroat is a federal species of special concern and CNDDB reports occurrences in Rodeo Lagoon, less than one mile from the project site (CDFG 2003). This occurrence is outside of the project boundary, however this species could also occur in drainages adjacent to the project site. Red-legged frog occurring in near-by water bodies may use lands near the project as possible upland habitat. Brown pelican and Tidewater goby are found in Rodeo Lagoon.

In addition to special-status species, non-listed species that occur within the project area and that may be impacted by construction activities include the monarch butterfly and nesting birds and raptors. Monarch butterflies hold no federal protection status, overwintering sites for this species are considered unique to California and are protected by CDFG. This species is known to overwinter in the Tennessee Valley, Fort Mason and Fort Baker. Monarch butterflies roost in eucalyptus or cypress trees near a constant water source. CNDDB reports a known wintering site for monarch butterflies in a eucalyptus grove at Fort Barry, adjacent to the youth hostel (See Appendix B). The closest known roosting site is outside the project.

Many nesting and breeding birds are protected by the federal Migratory Bird Treaty Act. Nesting birds and raptors may occur in the Monterey pine and large cypress trees and in grasslands located on the project site as well as use the dense stands of coyote brush south and east of the project site for nesting and foraging. Raptors observed during reconnaissance-level surveys include red tailed hawk, red-shouldered hawk (*Buteo lineatus*), American kestrel (*Falco sparverius*), and white-tailed kite. Passerine species (song birds) observed during the site visit include California thrasher (*Toxostoma curvirostre*), western meadowlark (*Sturnella neglecta*), and northern flicker (*Colaptes auratus*). Great-horned owls are known to be nesting in the Fort Cronkhite area (GGNRA,2004).

### ***Wetlands***

The National Park Service (NPS) conducted a wetland inventory for the entire Rodeo Valley in 2002; however, the area around The Center was not mapped either for reasons of access or because it fell below the minimum mapping area requirements. NPS staff have done a preliminary wetland assessment and it is estimated there are .08 acres of wetlands occurring within the project area that may fall under the jurisdiction of the U.S. Corps of Engineers (Castellini 2003) (see Figure III-1). Many of these features are narrow drainages along the northern side of the existing Marine Mammal Center facilities and are the result of past land use practices. These features are the result of natural drainages and installed concrete or asphalt drainages that have accumulated sediment and debris resulting in establishment of wetland vegetation. These features are seasonal and of low habitat quality. Vegetation within these features include rush (*Juncus* sp.), umbrella sedge (*Cyperus eragrostis*), curly dock (*Rumex crispus*), and Italian ryegrass (*Lolium multiflorum*). A larger drainage swale is located along the north eastern side of the treatment site facilities at the bottom of the hillside and adjacent to the concrete drainage ditch. This swale includes curly dock, umbrella sedge, rush, and mature willows (*Salix* sp.). This wetland swale is seasonal and higher habitat quality, providing habitat for such species as pacific tree frog (*Hyla regilla*) and western toad (*Bufo boreas*).

Southeast of the treatment site adjacent to the former kennel site is a much larger contiguous wetland area that contains Palustrine Emergent vegetation at the top of the drainage and Palustrine Scrub-Shrub further down the drainage.

## **Regulatory Background**

### ***Special Status Species***

As defined in this document, species are accorded “special-status” because of their recognized rarity or vulnerability to various causes of habitat loss or population decline. Some are formally listed or receive specific protection defined in federal or state endangered species legislation. Other species have no formal listing status as threatened or endangered, but have designations as “rare” or “sensitive” on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged experts, such as the California Native Plant Society (CNPS).

### ***Migratory Bird Treaty Act***

The Federal Migratory Bird Treaty Act (16 U.S.C., Sec. 703, Supp. I, 1989) prohibits the killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others. The Migratory Bird Executive Order of January 11, 2001 directs executive departments and agencies to take certain actions to implement this Act, and defines the responsibilities of each federal agency taking actions that have, or are likely to have, a measurable affect on migratory bird populations. All project actions within the GGNRA must comply with this act; therefore, they cannot result in unauthorized take of migratory birds.

### ***Wetlands and Waters of the United States***

Wetlands and other water resources, e.g., rivers, streams and natural ponds, are a subset of “waters of the United States” and receive protection under Section 404 of the Clean Water Act (CWA). The Army Corps of Engineers (the Corps) has primary federal responsibility for administering regulations that concern waters and wetlands. Waters of the U.S. and their lateral



**Figure III-1**  
**Potential USACE Jurisdictional Wetlands in the Vicinity of the Marine Mammal Center**



SOURCE: National Park Service

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limits are defined in 33 CFR Part 328.3(a) and include streams that are tributaries to navigable waters and their adjacent wetlands. The lateral limits of jurisdiction for a non-tidal stream are measured at the line of Ordinary High Water Mark (OWHM) (33 CFR Part 328.3(e)) or the limit of adjacent wetlands (33 CFR Part 328.3(b)). Any permanent extension of the limits of an existing water of the United States, whether natural or human-made, results in similar extension of Corps jurisdiction (33 CFR Part 328.5).

Waters of the U.S. fall into two categories: wetlands and other waters. Other waters include waterbodies and watercourses such as rivers, streams, lakes, springs, ponds, coastal waters, and estuaries. Wetlands include marshes, meadows, seep areas, floodplains, basins, and other areas experiencing extended seasonal soil saturation. Seasonally, or intermittently-inundated features such as seasonal pools, streams and tidal marshes are categorized as wetlands if they have hydric soils and support wetland plant communities. Seasonally-inundated waterbodies or watercourses that do not exhibit wetland characteristics are classified as other waters of the United States.

Under Section 10 of the Rivers and Harbors Act of 1899, the construction of structures in, over, or under, as well as excavation of material from or deposition of materials into ‘navigable waters’ is regulated by the Corps. The term ‘navigable waters’ of the United States means those waters of the U.S. that are subject to the ebb and flow of tide shoreward to the Mean High Water Mark (MHW) and/or are presently used, or may be susceptible to use, to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the water body and is not extinguished by later actions or events which impede or destroy navigable capacity (33 CFR 329. 4).

Section 10 jurisdiction is determined for tidal waters as the Mean High Tide Line (MHW) and in non-tidal areas, the OWHM is used. Navigable waters typically have the same boundaries as, or lie within the boundaries of, waters of the United States.

## ***Geology, Soils, and Seismicity***

### **Geologic and Seismic Setting**

#### ***Regional and Site Geology***

The Center is located on a site that has been highly disturbed. Paleontological resources are not expected to be found in the project area. Marine sedimentary and volcanic rocks of the Franciscan Complex underlie the Marin Headlands in the vicinity of the Marine Mammal Center.<sup>1</sup> The main area of the Center property is located on a relatively level cut-and-fill pad that was originally constructed for a Nike Missile battery site. The pad is located at the base of an over-cut slope (approximately 2:1 [horizontal to vertical]). The site is underlain by sandstone and shale of the Franciscan Complex (Rice and Smith 1976); outcrops of shale bedrock occur on the west portion of the slope and sandstone outcrops occur on the east portion (Cleary Consultants, Inc. 2003). Bedrock underlying the slopes and valleys around the project site also includes Franciscan chert (ancient sea floor) and greenstone (altered volcanic rocks), and young colluvium. Surficial erosion gullies occur in the shallow soils on portions of this cut slope.

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<sup>1</sup> The Franciscan Complex is the assemblage of rocks that form the basement rock of the Coast Ranges east of the San Andreas fault. These rocks were named at San Francisco (Elder, 2001).

Exploratory soil borings drilled as part of a geotechnical investigation for this project encountered soils ranging from dense gravelly clayey sand fill over stiff to hard sandy clay on the western portion of the site, in the vicinity of the proposed new buildings. Another boring, taken near the northern boundary in the area of the largest proposed embedded tank (tank G11), encountered clayey sand over very dense weathered sandstone bedrock of the Franciscan Complex. A boring taken in the southeast corner of the main Center site pad encountered layer of medium dense clayey sand fill over approximately seven feet of soft sandy clay fill, which overlay stiff sandy clay, also possibly fill, to the boring depth of 15 feet (Cleary Consultants, Inc., 2003). The approximate location of the exploratory borings is shown in Figure III-2.

Soils located in the Center vicinity, as classified by the Natural Resource Conservation Service (NRCS), include the *Xerothents, fill* at the Center site, and *Tamalpais-Barnabe Variant very gravelly loams* to the north, east, and south, and *Cronkhite-Barnabe complex* soils west to the west. *Xerothents, fill* consists of material that has been mechanically moved and mixed, and may contain varying amounts of rock, concrete, asphalt, and other material. *Tamalpais* and *Barnabe* series soils are made up of upland soils derived from weathered chert and sandstone and *Cronkhite* soils are made up of soils derived from sandstone and shale (USDA NRCS, 1985).

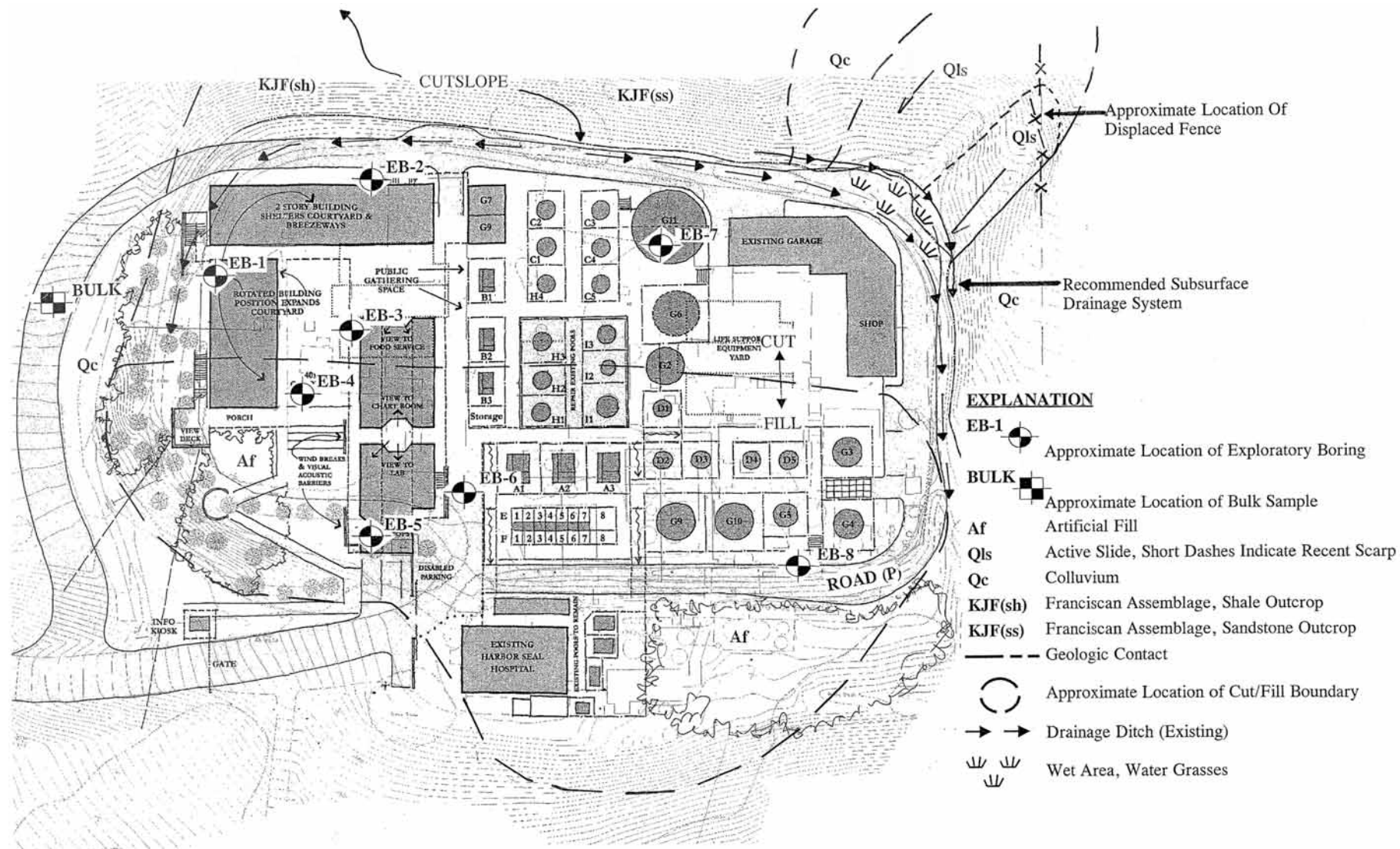
Perched groundwater was encountered at one of the eight borings, taken near the northern boundary on the west side of the (at the location of one of the new buildings). During boring, the groundwater was encountered at a depth of approximately 2.5 feet, and 3.5 hours after drilling at a depth of 13.5 feet.

### ***Geologic Hazards***

The geologic map of southern Marin County (Rice and Smith, 2003) indicates that numerous landslides have occurred in the site vicinity. The site is in an area that “contains few if any large, mapped landslides but locally contains scattered small landslides and questionable, identified larger landslides” according to a map showing the distribution of slides and earth flows in Marin County (Wentworth, et al., 1997). Several debris-flow source areas are located on the slopes northwest, north, and northeast of the site according to a map of principal debris-flow source areas in the County (Ellen, et al., 1997). An active slide area, approximately 100 feet wide and 150 feet long, is located near the northeastern corner of the Center site (see figure III-2). According to the geotechnical investigation conducted for this project, the slide apparently occurred shortly after the original grading of the site during the 1950s (Cleary Associates, Inc., 2003). The toe of the slide is near the area of the proposed perimeter roadway. Based on the shallow depth of the slide scarp and the moderate slope of the slide area (3:1, horizontal to vertical), significant further slope movement in this area is not anticipated, although wet conditions at the base of the slide could contribute to creep or minor movement of the slide (Cleary Consultants, Inc., 2003). Soil erosion, including rill or gully erosion<sup>2</sup> of the shallow soils on the existing cut slope or erosion of fill materials at the site, could undermine road or building foundations or destabilize engineered slopes.

<sup>2</sup> Rill erosion or “rilling” refers to the development of numerous minute, closely spaced channels resulting from the uneven removal of surface soil by running water that is concentrated in streamlets of sufficient volume and velocity to generate cutting power. Rilling is the intermediate process between sheet erosion and gully erosion.

**Figure III-2**  
**Location of Geologic Features and Exploratory Soil Borings**



SOURCE: Cleary Consultants, Inc. and Noll & Tam Architects

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NOTE: Conceptual road design not representative of specific alternatives

### ***Seismic Hazards***

The San Francisco Bay Area is considered seismically active, and earthquakes are an unavoidable geologic hazard at the Marin Headlands. The San Francisco Bay Area region contains both active and potentially active faults.<sup>3</sup> The closest active faults to the Center are the San Andreas fault, located approximately four miles west, the Hayward fault, located approximately 19 miles east; other active regional faults include the Rodgers Creek fault, located about 24 miles northeast, and the San Gregorio-Hosgri-Seal Cove Fault Zone, located about 22 miles southwest (Jennings 1994) (see Figure III-3). Recent studies by the United States Geological Survey (USGS) indicate there is a 62 percent likelihood of a Richter magnitude 6.7 or higher earthquake occurring in the Bay Area in the next 30 years (USGS, 2003). This area of the Marin Headlands would experience strong to very strong ground shaking from an earthquake on the closer faults, and moderate to strong ground shaking from an earthquake on the more distant faults (ABAG, 2003).

Seismic ground shaking may trigger landslides or debris flows and may cause secondary ground failures, including liquefaction, lateral spreading, and ground lurching. As noted in the Geologic Hazards discussion above, several debris-flow sources have been identified in the slopes north of the site. Liquefaction is the sudden loss of strength in loose, saturated materials (predominantly sands) during strong ground shaking, which results in the temporary fluid-like behavior of those materials (much like quicksand). Liquefaction typically occurs in areas where groundwater is shallow, and soils consist of poorly consolidated, well-sorted, clay-free sands and silts. The geotechnical investigation found that the Center site primarily is underlain by medium-dense to dense clayey sand, very stiff to hard sandy clay, and relatively shallow Franciscan bedrock. Based on these conditions, the investigation concluded that the likelihood of soil liquefaction during strong ground shaking at the site is low (Cleary Consultants, Inc., 2003).

The geotechnical investigation conducted at the site concluded that the hazard resulting from surface fault rupture at the site is low (Cleary Consultants, Inc., 2003).

## **Regulatory Background**

### ***Seismic Hazards Mapping Act***

The Seismic Hazards Mapping Act was developed to protect the public from the effects of strong ground shaking, liquefaction, landslides, or other ground failure, and from other hazards caused by earthquakes. This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. The California Geologic Survey has not yet completed a preliminary Seismic Hazards Map for the western portion of the Marin Headlands, which includes the project location.

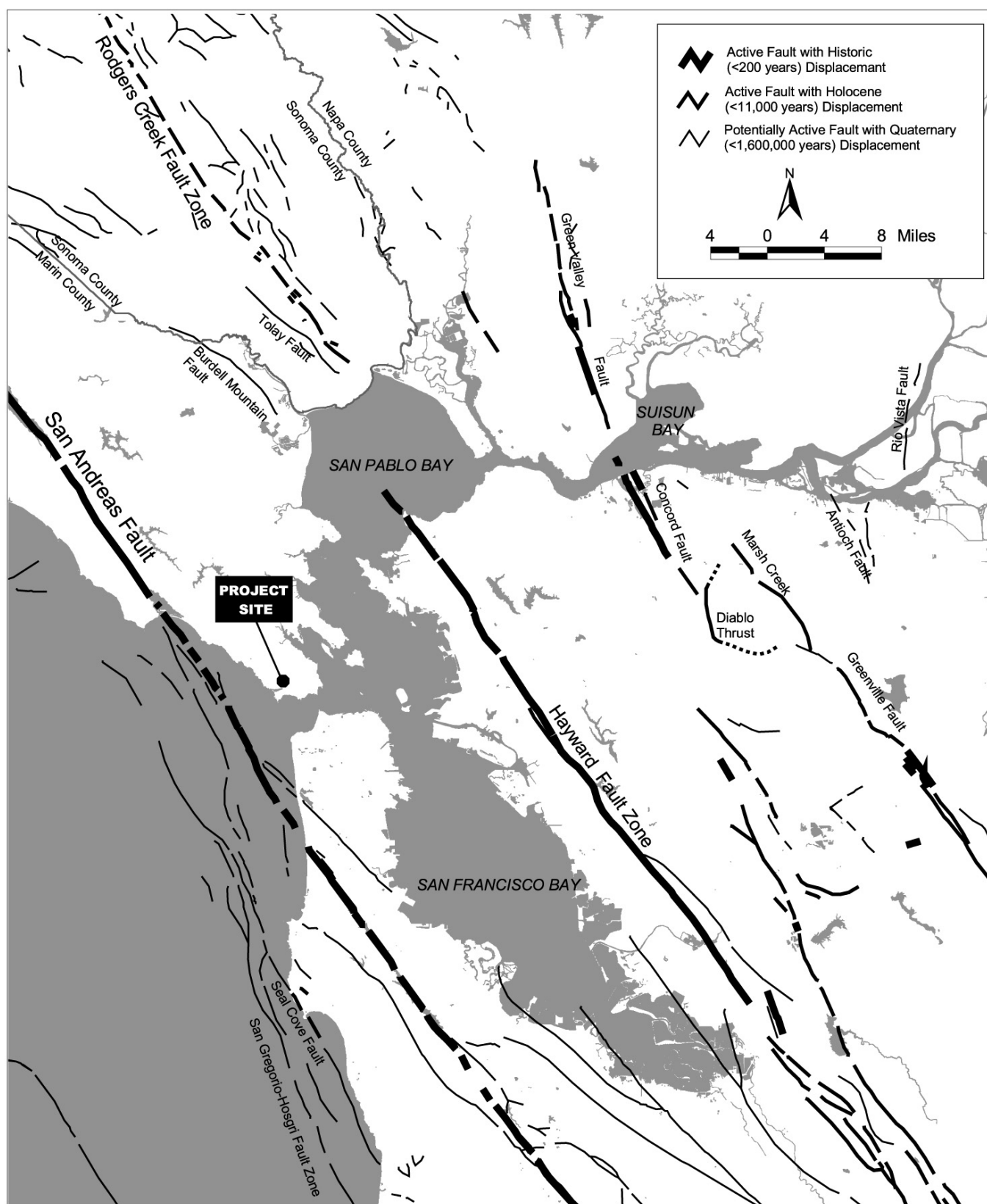
### ***California Building Code***

The California Building Code (California Code of Regulations Title 24, Part 2) is part of the California Building Standards Code (CBSC, 1995). The California Building Code incorporates by

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<sup>3</sup> An active fault is defined by the State of California as a fault that has experienced surface displacement within Holocene time (approximately the last 10,000 years). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not, of course, mean that faults lacking evidence of surface displacement are necessarily inactive. "Sufficiently active" is also used to describe a fault if there is some evidence that Holocene displacement occurred on one or more of its segments or branches (Hart 1997).

**Figure III-3**  
**Active and Potentially Active Bay Area Earthquake Faults**





reference, with necessary California amendments, the Uniform Building Code (UBC), which is published by the International Conference of Building Officials and is a widely adopted model building code in the United States. About one-third of the text within the California Building Code has been tailored for California earthquake conditions (ICBO, 1997).

### ***Hazardous Materials***

United States Army Corps of Engineers recently conducted environmental site investigations at several formerly used defense sites on GGNRA lands. No significant hazardous materials were found on The Center site. Under a separate transaction, elevator hydraulic fluid from the former Nike missile facility on The Center site was recently removed by the Army Corps of Engineers (DiStefano, Tony – personal communication).

Due to the considerable age of many of the structures within the Marin headlands, lead-based paint and asbestos are commonly identified in historic buildings. In general, structures constructed before December 31, 1978 are at-risk for lead-based paint, and asbestos was commonly used as a building material until 1978. An evaluation to determine the potential presence of lead-based paint has been conducted on structures planned for removal at The Center (McKewan, Tom – personal communication). Lead based paint was found on several above ground structures, such as pipes and the tops of the silos. No lead has leaked into the soil. Asbestos was found on the transit panels in the silo control rooms.

### **Regulatory Setting**

Under Title 22 of the California Code of Regulations, Division 4.5, Chapter 11, Article 3, hazardous materials are grouped into the following four categories, based on their properties: toxic (causes human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), and reactive (causes explosions or generates toxic gases). Hazardous materials have been and are commonly used in commercial, agricultural, and industrial applications, as well as in residential areas to a limited extent.

The criteria that render a material hazardous also make a waste hazardous (California Health and Safety Code, Section 25151). If improperly handled, hazardous materials and wastes can result in public health hazards if released to the soil or groundwater or through airborne releases in vapors, fumes, or dust.

### ***Air Quality***

#### **Ambient Air Quality Standards**

The federal Clean Air Act Amendments of 1970 established national ambient air quality standards, and individual states retained the option to adopt more stringent standards and to include other pollutants. California had already established its own air quality standards when federal standards were established, and because of the unique meteorological conditions and associated air quality problems in the state, there is considerable diversity between state and federal standards currently in affect in California.

The ambient air quality standards incorporate a margin of safety and are designed to protect those segments of the public most susceptible to respiratory distress, known as sensitive receptors, such as asthmatics, the very young, the elderly, people weak from other illness or



disease, or persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat above the ambient air quality standards before adverse health effects are observed.

### **Air Quality Monitoring Data**

Federal, state, and local agencies operate a network of monitoring stations throughout California to provide data on ambient concentrations of air pollutants. Recent monitoring data from monitoring stations in San Francisco indicate occasional exceedances of state standard for PM<sub>10</sub>. All other criteria air quality standards have not been exceeded in San Francisco over the past five years.

### **Air Quality Plans**

The federal Clean Air Act requires nonattainment and maintenance areas to prepare air quality plans that include strategies for attaining and maintaining the national standards. The state California Clean Air Act also requires plans for nonattainment areas. Thus, just as areas in California have two sets of designations, many – including the Bay Area – also have two sets of air quality plans: one to meet federal requirements relative to the national standards and another to meet state requirements relative to the state standards.

#### ***State Implementation Plan***

Regional air quality plans developed under the federal Clean Air Act are included in an overall program referred to as State Implementation Plans (SIPs). Plans have been prepared for the Bay Area to address nonattainment and maintenance issues related to the national (one-hour) ozone standard and the national carbon monoxide standard.

A Bay Area ozone SIP, the *Ozone Attainment Plan* (Association of Bay Area governments 1999), has recently been approved by U.S. EPA. This 2001 Ozone Attainment Plan replaces the previous Bay Area ozone SIP (i.e., the *Ozone Maintenance Plan*) in conjunction with the approved portions of the 1999 Plan. The *Carbon Monoxide Maintenance Plan* (Association of Bay Area Governments 1994) was developed to ensure continued attainment of the national carbon monoxide standard in the Bay Area.

#### ***Clean Air Plan***

The Bay Area Air Quality Management District (2000) developed the *Bay Area 2000 Clean Air Plan* to meet planning requirements under the state California Clean Air Act. This plan was developed to address the nonattainment designation of the Bay Area with respect to the state ozone standard.

### **Conformity With Adopted Air Quality Plans**

U.S. EPA also has developed criteria and procedures for determining the conformity of federal actions to the applicable SIPs. The General Conformity Rule is used to assess conformity with an applicable SIP. The General Conformity Rule states that an action may be classified as exempt if emissions will not increase, or an increase in emissions is clearly de minimis. Because of the relatively small scale of the proposed project and because there would be no operational emissions of criteria air pollutants, the Marine Mammal Center Site and Improvements Project would have emissions below the “de minimus” threshold, and therefore would be presumed to be in conformance with the General Conformity Rule.

## Other Regulatory Requirements

California Air Resources Board (CARB), the State's air quality management agency, is responsible for establishing and reviewing the state ambient air quality standards, compiling the California SIP and securing approval of that plan from U.S. EPA. CARB also oversees the activities of air quality management districts, which are organized at the county or regional level. As a general matter, U.S. EPA and CARB regulate emissions from mobile sources, and the air districts regulate emissions from stationary sources associated with industrial and commercial facilities.

In the Bay Area, the Bay Area Air Quality Management District (BAAQMD) is the regional agency empowered to regulate air pollutant emissions from stationary sources. The BAAQMD also monitors odors through its Regulation 7, which requires the District to take certain enforcement actions after receiving 10 or more complainants over a 90 day period. Once review under Regulation 7 is initiated, the BAAQMD would collect air samples and determine the dilution threshold necessary to render the odor to an undetectable level. If the measured dilution rate exceeds a 4:1 ratio at the property line or the standard for the given height of the emission source, then the operator must reduce odor emissions to below the threshold.

## Sensitive Receptors

Some land uses are considered more sensitive than others to odors and air pollution. The reasons for greater than average sensitivity include pre-existing health problems, proximity to emissions source, or duration of exposure to air pollutants. Schools, hospitals and convalescent homes are considered to be relatively sensitive to poor air quality because children, elderly people and the infirm are more susceptible to respiratory infections and other air quality-related health problems than the general public. Recreational and residential areas are also sensitive to poor air quality.

## Noise

Sound levels are the audible intensities of air pressure vibrations, and are most often measured with the logarithmic decibel (dB) scale. To consider the human response to the pitch and loudness of a given sound in the context of environmental noise, the A-weighted frequency dependent scale (dBA) is usually employed. The equivalent energy indicator, Leq, is an average of noise over a stated time period, usually one-hour. The day-night average, Ldn, is a 24-hour average, which accounts for the greater sensitivity of most people to nighttime noise. Generally, a 3 dB difference at any time is noticeable to most people and a difference of 10 dB is perceived as a doubling of loudness.

## Noise-Sensitive Uses

Certain types of land uses are considered to be more sensitive to ambient noise levels than others, due to the amount of noise exposure (in terms of both exposure time and intensity) and the types of activities typically involved with these land uses. Schools, libraries, churches, hospitals, convalescent and nursing homes, auditoriums, parks, and outdoor recreation areas are generally more sensitive to noise than are commercial and industrial land uses. Residences may also be considered noise-sensitive uses because residents may be disturbed by noise. Land uses within the vicinity of the project study area are primarily recreational although some buildings southwest of the site house office and conference uses.

In a park setting, a natural soundscape is an area characterized by certain ambient acoustical and sound level qualities, absent the intrusion of sounds caused by humans or human technology. The natural soundscape is a component of any park setting that is intended to be managed or appreciated as natural, such as wilderness areas. The natural soundscape is viewed as a resource, as having value for its presence, and as a value to be appreciated by visitors. Many park visitors have an expectation of seeing, hearing and experiencing phenomena associated with a specific natural environment. The sounds made by wind, birds, geysers, elk, wolves, waterfalls, and many other natural phenomena are associated by visitors with unique features and resources of parks.

The marine mammals on the site are not as sensitive to noise impacts as some animals might be in that their natural environment (the surf and ocean) is naturally noisy however, sudden loud noises or threatening noises, etc would be stressful to the animals (Haulena, 2004).

### **Regulatory Requirements**

Although there is not a Soundscape Management Plan for GGNRA noise management will use Director's Order #47: Soundscape Preservation and Noise Management. The key directive from this Order is that where natural soundscape conditions are currently not impacted by inappropriate noise sources, the objective must be to maintain those conditions. Where the soundscape is found to be degraded, the objective is to facilitate and promote progress toward the restoration of the natural soundscape.

### **Existing Noise Sources**

The ambient noise environment in the project area is primarily influenced by motor vehicles traveling on Bunker Road. Occasional aircraft overflights also contribute to the ambient noise environment.

Background noise in the park is generally much lower than that expected or tolerated in developed areas in which federal noise guidelines are generally applied.

Park operations generate noise intermittently from personnel, vehicles, generators, hand tools such as hammers and power saws, heavy equipment such as backhoes and tractors, and smaller power equipment such as chain saws and weed eaters. Noise from park operations above ambient levels is confined to daylight hours.

## **Cultural Resources**

### ***Historic Context***

The project area is within the Forts Barry, Baker and Cronkhite Historic District which was listed on the National Register of Historic Places in 1973. The Area of Potential Effect (APE) will have two components: 1) The immediate APE will be Forts Barry and Cronkhite from summit to summit of surrounding hills for intrusion into the feeling, setting, association, etc. of the National Register property. 2) The larger APE component will be a cumulative look at effects on the total National Register property. The effects of adding new construction within the district will be assessed for cultural resources, including historic buildings and cultural landscapes (see Figure I-2). There are no known or anticipated archeological resources.

The project site was originally part of the military structures of Fort Cronkhite established in 1941 as a military mobilization post. The project site itself is the former Launch Area of the Air Missile Defense Site SF-87-L constructed in 1955 approximately ½ mile from the primary Fort Cronkhite campus (SF-87-L was operational until 1974). Site SF-87-L was one of two NIKE missile launch sites located within the Forts Baker, Barry and Chronkhite (FBBC) Historic District listed as contributing elements of the FBBC National Register property. The other site, the neighboring site SF-88-L, located approximately ¾ miles from the site across Rodeo Lagoon, was restored in 1996. The neighboring site SF-88-L, located approximately ¾ miles from the site across Rodeo Lagoon, was restored in 1996 and is listed on the National Register of Historic Places.




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*1950's era photo  
Site SF-87-L from  
Presidio Archives*

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In anticipation of the deactivation of the FBBC, the Army transferred the FBBC to the NPS in the legislation which created Golden Gate National Recreation Area (GGNRA) in 1972. The Center began operations at Site SF-87-L in 1975.

In July 2003, the Launch Area of the Air Missile Defense Site SF-87-L was determined to no longer be a contributing feature to the FBBC (National Register) Historic District. This determination was based on a recent assessment that concluded that successive modifications made by overtime had rendered the integrity of the site questionable. It was determined that the property no longer conveys any association with its historic mission of coastal missile defense. The determination stated that modifications had diminished the property's integrity of design, materials, setting, workmanship and feeling as well as its association with its historic period of significance (see Appendix F). However, public comment on the National Register determination strongly recommended that, even though the site no longer contributes to the historic district, its military history should be interpreted to the public under any alternative for reuse.

## Existing Uses and Features

*(Descriptions re-printed in part from the Amendment to the National Register Nomination for the FBBC Historic District)*

The Center currently occupies 3 historic buildings within The Fort Cronkhite complex. Building #1065 is occupied by the administrative staff. Building #1071 is occupied by the education

department and Building #1044 includes research Laboratory functions. These three buildings are approximately ½ mile from the Center’s treatment site used for animal care.




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*Administration  
building at Fort  
Cronkhite*

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The animal-care functions are located at the former Site SF-87-L. The site includes two underground abandoned missile silos, approximately 3200 square feet and both currently used for miscellaneous storage. The general condition of the existing silos is poor with sub-standard exiting and access and, therefore, suitable for only storage of un-sensitive materials. The former NIKE missile team ‘ready room’ was renovated in 1998 into a critical care and surgery facility for injured marine mammals. The balance of the existing structures on the project site are non-historic cargo containers and other portable structures which have been adapted for essential animal care operations including: food preparation; chart room; medical offices; storage and

facilities maintenance offices; and gift shop. Under some alternatives, parking facilities would be located at the former kennel site south of the treatment site. This fenced area housed dogs when the Nike site was active and is currently used for storage.

A *cultural landscape* is a “geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, or person, or that exhibit other cultural or aesthetic values” (Page, Gilbert and Dolan 1998). The landscape characteristics that contribute to the integrity of a cultural landscape include spatial organization and cluster arrangement, land use, cultural traditions, circulation, topography and drainage, vegetation, buildings and structures, views and vistas, small-scale features, and archaeological sites.

Cultural Landscape refers to the organization and interrelationships of the natural and designed features of a site by use reflecting cultural values and traditions, and changes to those features over time. Much of the park land within GGNRA retains strong historical integrity, but there are areas that have been diminished by the introduction disparate elements that do not contribute to the overall character and identity of the site. The utilitarian buildings of the treatment site fall into this category.

## ***Regulatory Requirements***

In order to ensure the preservation of historic resources throughout the Park, the NPS has developed protocols for the conservation and adaptive re-use of the structures and the grounds. Specifically, the NPS, the California Historic Preservation Office, and the Advisory Council on Historic Preservation entered into a Section 106 Programmatic Agreement in 1992 that details the procedures that must be followed for modifications proposed on GGNRA property. This agreement provides for internal GGNRA review of some types of projects but requires specific consultation with SHPO for all proposals involving the construction of new buildings and structures.

This consultation and review would be directed by the Secretary's Standards for Treatment of Cultural Landscapes and National Parks Service Cultural Resource Management Guidelines (NPS – 28) which states, "Contemporary additions or development adjacent to historic structures should be designed to complement the structures visual and physical characteristics."

The definitive paragraph cited below states the NPS policy on new construction within an historic district:

A new structure or addition will be compatible if it maintains the overall pattern of development in the area and is visually unobtrusive in terms of scale texture, and continuity of architectural style or tradition. Scale is defined in terms of similar or harmonious proportions, especially height and width. Texture refers to the surface quality of materials, especially the reflection of light. Continuity encompasses such characteristics as use of color, internal organization of space, massing, roof forms, architectural details, site relationships, palette of materials, and placement of windows and doors. Unless a new structure is a reconstruction, it should not duplicate or mimic a historic structure.

## **Social Resources**

### ***Transportation***

#### **Existing Conditions**

The Center provides medical treatment and rehabilitation to marine mammals that are rescued on the California coast and provides educational programs both on and off-site. This section summarizes existing site access and on-site circulation and parking for the Center.

#### ***Site Access***

Animal care facilities are located on Old Bunker Road, while administrative functions are carried out nearby at Ft. Cronkhite in Building 1065. Buildings 1071 and 1044 are used for education and a research facility (See figure 1-2). Primary vehicle access to both locations is provided by Bunker Road, which connects with U.S. Highway 101 and Alexander Avenue in Sausalito (see figure I-1). In addition, Conzelman Road provides a secondary connection from Bunker Road to the Golden Gate Bridge via a short connection on McCullough Road.



Bunker Road is a relatively flat but winding two-lane rural road that carries approximately 2,500 vehicles per day during the peak summer season, and up to 4,000 vehicles on peak Sundays. Bunker Road has several traffic calming speed bumps through Capehart Housing, a small residential area located to the east of The Center, indicating that speed, not traffic volume, may be the primary traffic concern.

Parallel to Bunker Road, Conzelman Road is a scenic two-lane roadway (reduced to one lane in some segments) that is characterized by significant grades and a number of turns with tight turning radii, offering spectacular views of the Golden Gate and San Francisco. The westernmost segment of Conzelman Road becomes a one-way westbound road west of Battery 129 (also known as Hawk Hill) about .5 mile west of the intersection with McCullough Road. Conzelman Road ends at Field Road, which in turn ends at Bunker Road in the western part of this park area. McCullough Road provides a connection between Bunker Road and Conzelman Road in the eastern part of this park area. All of these roads, with the exception of Bunker Road, are similar to Conzelman Road with significant grades and sharp turning radii. The Golden Gate National Recreation Area is one of the most heavily visited urban area parklands in the United States. The Marin Headlands are a particularly popular area of the GGNRA.

Counts measuring levels of vehicle usage for days of the week and time of day were performed on Bunker Road and Conzelman Road in 2000. The results are presented on tables III-1 and III-2 (Fehr & Peers, 2003). The highest traffic volumes were noted on weekends with clear and warm weather, in contrast the lowest traffic volumes were noted on weekdays and times of poor weather. Conzelman Road is more heavily utilized serving the majority of the recreational users, with approximately 5,400 daily vehicles during the peak summer season and 8,000 vehicles on peak Sundays. These counts measure trips to the Marin Headlands or vicinity so do not give a complete picture of number of visitors to the Center treatment site itself. A three-year study conducted by the Center shows the average number of visitors to the site to be 72.3 with a peak of 110 visitors. Visitors typically arrive between 10 and 5 and often travel more than one to a vehicle (Hannah, Kathleen – personal communication).

The primary constraint to traffic flow on Bunker-Barry is the single-lane Baker – Barry Tunnel under U.S. Highway 101, east of The Center and north of the Golden Gate Bridge. The BAKER-Barry Tunnel is controlled by traffic signals at either end, resulting in diminished capacity and vehicle queuing, with a possible waiting time of five minutes posted. The tunnel height limitation is thirteen feet six inches. Observations made in the summer of 2000 indicated maximum vehicle queues ranging from 19 to 38 vehicles eastbound and 11 to 16 westbound over several weekends in July and August, although typical weekday queues are generally just several vehicles long based upon observations conducted in December 2003.

#### ***On-Site Circulation and Parking***

An access road from Old Bunker Road provides access for staff and visitors to the animal care facilities at The Center. The Center has access to a total of 91 parking spaces, including 42 parking spaces (at the treatment site 2 of which are disabled parking), 13 parking spaces along the access road and 12 are outside the Center's assigned lands. The Center uses 24 spaces at Fort Cronkhite.

As described above, visitor parking spaces consist of parallel parking spaces located on the entry driveway. Staff using the buildings at Fort Cronkhite park in lots near these buildings (approximately 24 spaces). During special events, the Center would also accommodate up to

Table III-1

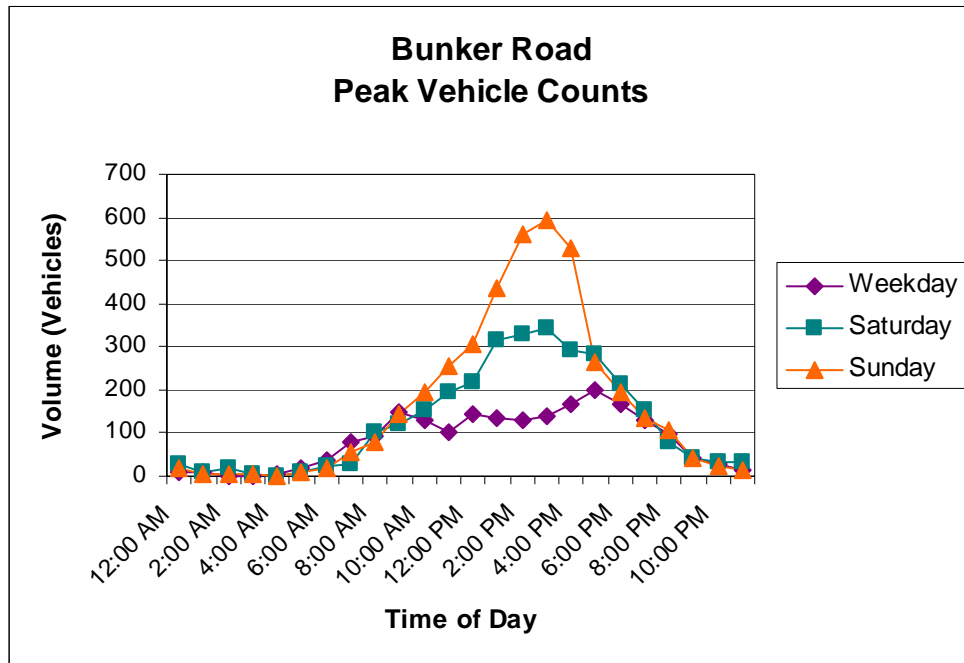
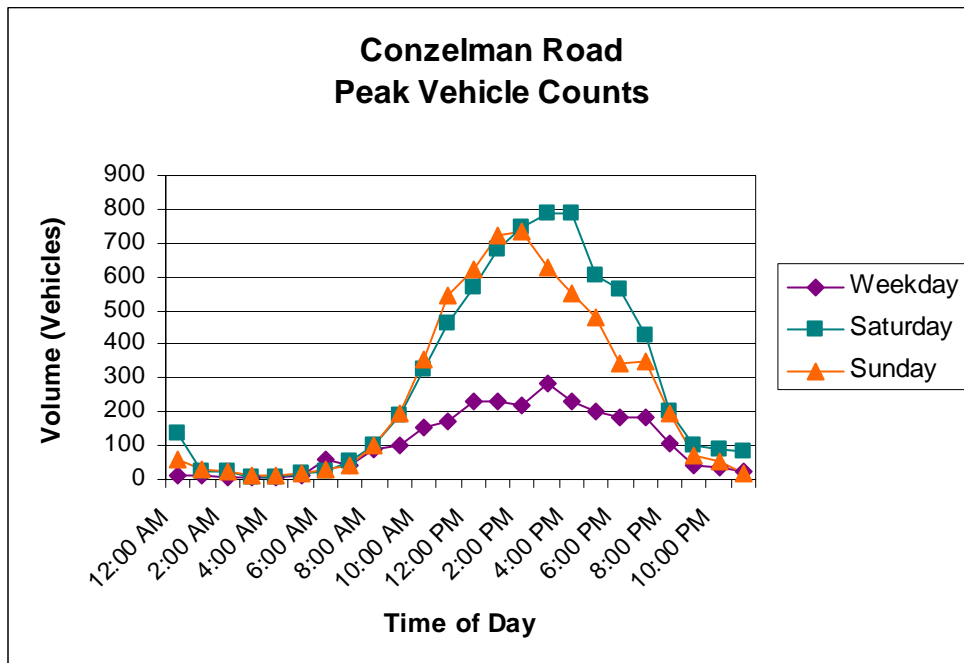


Table III-2



25 additional visitor cars at the National Park Service maintenance yard located adjacent to The Center. These estimates of available parking were derived from a study that looked at parking demand for the Center from 1996 to 2003 (MMC, 2003). Demand was consistent during these years. Currently, there is no designated bus parking. The Center currently parks up to two buses in the National Park Service maintenance yard.

A site visit was conducted in December 2003 to observe on-site circulation and parking characteristics. Key observations include:

- The visitor parking layout necessitates an awkward three-point turn directly in front of the main gate/visitor information area in order for vehicles to exit, hampering through access and creating hazardous conditions for any pedestrians in the area
- Old Bunker Road and the access road to The Center are in need of repaving in spots due to age and water damage

### ***Visual Resources***

The Marin Headlands within Golden Gate National Recreation Area is a primary visual resource of the San Francisco Bay Area. Together with the Presidio to the south of the Golden Gate Bridge, the hilly, grassland and forested open-space landscape of the Marin Headlands is a regional landmark, visually prominent within the built environment of urban San Francisco and Marin County communities. The visual shape of the Marin Headlands is largely defined by water, including the Pacific Ocean to the west and San Francisco Bay to the south and east. The Marin Headlands are readily visible from the Golden Gate Bridge, the Pacific Ocean and San Francisco Bay, several Marin County bayside communities including Sausalito and Marin City, Mount Tamalpais State Park to the north of the Marin Headlands, the Presidio and northern waterfront of San Francisco, office towers in the San Francisco financial district, and hill summits in San Francisco such as Twin Peaks.

The Marine Mammal Center is located in the southwestern area of the Marin Headlands, near the Marin Headlands Visitor Center and Rodeo Beach. The Center is located on a south-westerly facing hillside slope within a natural coastal plain below Wolf Ridge. The adjacent topography shields the site from views from many vantage points that are below the level of the site. Views to the site from vistas that are at the same level or above the site are shadowed by area topography (Dennis, 2003). Wolf Ridge rises gradually from Rodeo Lagoon, with scrub and occasional groups of trees accentuating the rolling topography of the project area. The area is visually dominated by vegetated natural open space areas and dynamic water features, including the Pacific Ocean and Rodeo Lagoon. The dynamic qualities imparted by the movement of ocean and lagoon water and, depending on weather, of coastal fog and mist contribute to the exceptional scenic resource value of the area. Built features are also visually prominent in the project area as relics of the former military presence in the area, including Fort Cronkhite, the bunker on a ridge west of the site, and The Center itself (a former Nike missile site). The corporation yard is located just below The Center contributing to the built appearance of this area of the Marin Headlands.

The former military facilities define the dominant architectural style in the area. Historic Fort Cronkhite buildings are characterized by one- and two-story rectilinear structures that are primarily wood-frame with some examples of concrete block structures. The buildings at Fort Cronkhite were built during three distinct time frames resulting in a mixture of architecture styles unified by planning and scale. Buildings are primarily bearing-wall construction with wood-

framed roofs (Scott Dennis Architect 2003). Fort Cronkhite buildings are unified in color predominantly featuring white siding and red pitched roofs.

The Marine Mammal Center site is visually characterized by built features. The majority of the site is paved, and is encircled by perimeter chain link fencing. The one-story administrative buildings, hospital, laboratories and staff facilities, garage and shop, animal pens and pools, and water treatment facility are a visual hodgepodge of utilitarian architectural styles and makeshift structures. The architectural style of The Marine Mammal Center facilities lacks visual coherence and detracts from the natural setting of the Marin Headlands and the uniform historic architectural style of nearby Fort Cronkhite. Current nighttime lightening is not shaded or moderated thus making the treatment site very visible at night.




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*The Marine Mammal Center site is visually characterized by built structures.*

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The Marine Mammal Center is visible from the network of Marin Headland roads and trails located near The Center. Nearby roads include Conzelman Road and Bunker road. Nearby trails include the Miwok Trail, Rodeo Lagoon Trail, Coastal Trail, and Wolf Ridge Trail. The trail network affords both fixed and dynamic, sequenced views of The Marine Mammal Center. Vegetation and topography visually screen trail users from prominent views of The Marine Mammal Center, although intermittent short-range and medium-range views of the low-lying, one-story built structures of the facility are visible from the Miwok, Rodeo Lagoon, Coastal, and Wolf Ridge Trails.




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*The Marin Headlands are readily visible from the Golden Gate Bridge.*

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The Center's built features are prominent, although topography and vegetation partially screen buildings. The corporation yard is similarly visually prominent from the old bunker site. The Bunker Road site provides medium- to long-range views of The Marine Mammal Center. The Center's one-story buildings are largely nestled within the topographic landform, and partially screened by Monterey pines, cypress trees, and coastal scrub.

## ***Utilities***

### **Electrical**

The existing electrical service feeds to the site are from PG&E via above-grade overhead distribution entering the site by two separate service feeds. The first independently metered feed supplies the main switchgear located in the existing sub-grade silo on the West edge of the site. The second independently metered feed supplies above-grade switchgear located on the East of the site.

### **Gas and Fire Response**

There is no piped natural gas service to the project site. Existing gas appliances are serviced by on-site propane gas delivered to an above-grade vessel. The current on-site buildings are not fire-sprinklered. An existing on-site fire-fighting hydrant is located on the access road at the site entry.

## ***Recreation and Public Use***

The Marine Mammal Center is located in the Marin Headlands, which is part of the Golden Gate National Recreation Area. GGNRA is the largest urban national park in the world comprising 76,500 acres of land and water that includes 28 miles of wild coastline, other distinct natural landscape types and vegetative communities, and diverse developed uses, many of which have substantial historic and aesthetic value. GGNRA includes the Marin Headlands, Muir Woods National Monument, Alcatraz Island, and the Presidio of San Francisco.

GGNRA and the Marin Headlands are part of a network of local, state, and federal parks in the San Francisco Bay Area, including City of San Francisco parks (e.g., Golden Gate Park and Lincoln Park), state parks (e.g., Mt. Tamalpais, Angel Island, and China Camp), and national parks (e.g., Point Reyes National Seashore). Individually and collectively, these parks provide recreational opportunities having extraordinary variety and value for residents of the San Francisco Bay Area, and visitors from around the state, the country, and the world. Nearly 14 million individuals visit GGNRA annually.

The Marine Mammal Center is the largest marine mammal facility in the world to combine animal rehabilitation with an on-site research lab, and the only facility to treat an average 500 animals a year. Individuals from all over the world visit The Marine Mammal Center, and more than 60,000 people are reached by its education programs each year. The Center is open to visitors nearly every day of the year from 10:00 a.m. to 4:00 p.m.

Education and public outreach are important components of The Marine Mammal Center mission and is called for in GGNRA's Cooperative Agreement. The Center is committed to increasing appreciation of marine mammals, fostering informed decision-making affecting them, and inspiring action to protect the marine environment. Each year The Center provides marine science education programs and events for school children and members of the general public, helping to foster a sense of responsibility and connection to the marine environment. Education

programs are conducted at a building located at Fort Cronkhite, approximately ½-mile from the treatment site, and at the treatment site using limited program space and educational programs occurring on outdoor bleachers and off-site at Rodeo Beach. The Marine Mammal Center offers several educational programs, including such topics as Pinniped Patients, Guided Beach Walk, In Our Marine Science Classroom, and Research Discovery Day. In addition, the Marine Mammal Center hosts a program on sea lions at Pier 39 in San Francisco and provides on-site marine mammal educational programs for schools via the Whale Bus program.

The Marine Mammal Center is currently undersized and improperly designed to adequately provide educational programs to fulfill The Center's mission. Currently, The Center provides three interpretive panels with limited information for the visitor. The facility lacks a physical sense of arrival for visitors, and provides limited orientation information for the visitor navigate the site. The Center lacks indoor or sheltered classroom space at the treatment site, marine mammal pens are not configured in a manner that allows visitors to view the animals without disturbing and potentially habituating the animals, and parking arrangements are not safe or convenient.

Several Marin Headlands attractions are located near The Marine Mammal Center, including the Marin Headlands Visitor Center, Rodeo Beach, Fort Cronkhite, and the Nike missile site. Numerous trails are located in the vicinity of The Marine Mammal Center, including the Miwok Trail, Coastal Trail, Wolf Ridge Trail, Rodeo Lagoon Trail, and Bobcat Trail. This area of the Marin Headlands offers a wide range of active pursuits, as well as opportunities for solitude, retreat, and discovery. Recreational activities in the area include walking, hiking, jogging, biking, sightseeing, photography, nature study, surfing, fishing, sunbathing, picnicking, and historic study.

## Impact Topics Dismissed from Further Analysis

### *Environmental Justice*

No aspect of the action alternatives of The Marine Mammal Site and Improvements Project would result in disproportionately high and adverse human health or environmental effects on minority or low-income populations. Any temporary restriction on travel or access to any area of the park that might result from the this Project would be equally applied to all visitors, regardless of race or socioeconomic standing.

### *Paleontological Resources*

The Center is located on a site that has been highly disturbed. Paleontological resources are not expected to be found in the project area.

### *Park Operations and Facilities*

The Center has been operating under a cooperative lease agreement with GGNRA for many years. An update to this agreement is being prepared in tandem with the NEPA process to reflect the proposed facility changes. The project is not going to change any of the fundamental tenants of that agreement. To the extent that Park operations could be impacted these impacts are being discussed under other resource topics.



### ***Prime and Unique Agricultural Lands***

There are no known agricultural lands in the project area; therefore, the action alternative would not affect prime and unique agricultural lands.

### ***Land Use***

Land uses within GGNRA are classified as “Parklands,” regardless of the individual types of land uses within the park. Implementation of the project would not effect existing land uses within the park. This potential project is an improvement to an existing use and an existing facility, not a change in overall land use.

### ***Public Health and Safety***

Public health and safety is not presented as a separate topic in this analysis, since project alternatives and other sections (transportation, visitor experience) evaluate park-related public health and safety issues.

### ***Museum Collection***

Implementation of elements of the action alternatives would not have a direct or indirect effect on park museum collections.

### ***Wilderness Experience***

There is no designated Wilderness within the project area.